IFWO

RAW SEQUENCE LISTING   DATE: 09/16/2004
PATENT APPLICATION: US/10/786,791   TIME: 12:20:54

Input Set : **N:\Crf3\RULE60\10786791.raw**
Output Set: **N:\CRF4\09162004\J786791.raw**

```
 1 <110> APPLICANT: Zhang, Zhaoda
 2         Amedio, John C.
 3         Caravan, Peter D.
 4         Dumas, Stephane
 5         Kolodziej, Andrew
 6         McMurry, Thomas J.
 7 <120> TITLE OF INVENTION: PEPTIDE-BASED MULTIMERIC TARGETED
 8         CONTRAST AGENTS
 9 <130> FILE REFERENCE: 13498-010002
10 <140> CURRENT APPLICATION NUMBER: US/10/786,791
11 <141> CURRENT FILING DATE: 2004-02-24
12 <150> PRIOR APPLICATION NUMBER: US/10/209,183
13 <151> PRIOR FILING DATE: 2002-07-30
14 <150> PRIOR APPLICATION NUMBER: US 60/308,721
15 <151> PRIOR FILING DATE: 2001-07-30
16 <160> NUMBER OF SEQ ID NOS: 27
17 <170> SOFTWARE: FastSEQ for Windows Version 4.0
19 <210> SEQ ID NO: 1
20 <211> LENGTH: 4
21 <212> TYPE: PRT
22 <213> ORGANISM: Artificial Sequence
23 <220> FEATURE:
24 <223> OTHER INFORMATION: synthetically generated peptide
25 <220> FEATURE:
26 <221> NAME/KEY: VARIANT
27 <222> LOCATION: 1
28 <223> OTHER INFORMATION: Xaa = Pro or a non-natural derivative thereof
29 <220> FEATURE:
30 <221> NAME/KEY: VARIANT
31 <222> LOCATION: 2
32 <223> OTHER INFORMATION: Xaa = Tyr or a non-natural derivative thereof
33 <220> FEATURE:
34 <221> NAME/KEY: VARIANT
35 <222> LOCATION: 3
36 <223> OTHER INFORMATION: Xaa = Gly or Asp, or a non-natural derivative of
37         Gly or Asp
38 <220> FEATURE:
39 <221> NAME/KEY: VARIANT
40 <222> LOCATION: 4
41 <223> OTHER INFORMATION: Xaa = Leu or a non-natural derivative thereof
42 <400> SEQUENCE: 1
43       Xaa Xaa Xaa Xaa
44         1
```

W--> (line 43)

ENTERED

RAW SEQUENCE LISTING
PATENT APPLICATION: US/10/786,791

DATE: 09/16/2004
TIME: 12:20:54

Input Set : N:\Crf3\RULE60\10786791.raw
Output Set: N:\CRF4\09162004\J786791.raw

```
46  <210> SEQ ID NO: 2
47  <211> LENGTH: 11
48  <212> TYPE: PRT
49  <213> ORGANISM: Artificial Sequence
50  <220> FEATURE:
51  <223> OTHER INFORMATION: synthetically generated peptide
52  <220> FEATURE:
53  <221> NAME/KEY: VARIANT
54  <222> LOCATION: 1
55  <223> OTHER INFORMATION: Xaa = Trp, Tyr, Phe, Ser, nTyr, dW, dF, F(3/4*), Y(3*), or a
56        non-natural derivative thereof
57  <220> FEATURE:
58  <221> NAME/KEY: VARIANT
59  <222> LOCATION: 2
60  <223> OTHER INFORMATION: Xaa = Glu, His, dGlu, Ser, or a non-natural derivative
thereof
61  <220> FEATURE:
62  <221> NAME/KEY: VARIANT
63  <222> LOCATION: 4
64  <223> OTHER INFORMATION: Xaa = Pro or a non-natural derivative thereof
65  <220> FEATURE:
66  <221> NAME/KEY: VARIANT
67  <222> LOCATION: 5
68  <223> OTHER INFORMATION: Xaa = Tyr or a non-natural derivative thereof
69  <220> FEATURE:
70  <221> NAME/KEY: VARIANT
71  <222> LOCATION: 6
72  <223> OTHER INFORMATION: Xaa = Gly or Asp
73  <220> FEATURE:
74  <221> NAME/KEY: VARIANT
75  <222> LOCATION: 9
76  <223> OTHER INFORMATION: Xaa = His, Phe, Tyr, or Trp
77  <220> FEATURE:
78  <221> NAME/KEY: VARIANT
79  <222> LOCATION: 10
80  <223> OTHER INFORMATION: Xaa = Ile, Leu, Val, Asn, F(3/4*), or a non-natural
81        derivative thereof
82  <220> FEATURE:
83  <221> NAME/KEY: VARIANT
84  <222> LOCATION: 11
85  <223> OTHER INFORMATION: Xaa = Asn, Gln, Ile, Leu, Val, or absent
86  <400> SEQUENCE: 2
W--> 87     Xaa Xaa Cys Xaa Xaa Xaa Leu Cys Xaa Xaa Xaa
88          1           5               10
90  <210> SEQ ID NO: 3
91  <211> LENGTH: 6
92  <212> TYPE: PRT
93  <213> ORGANISM: Artificial Sequence
94  <220> FEATURE:
95  <223> OTHER INFORMATION: synthetically generated peptide
```

RAW SEQUENCE LISTING
PATENT APPLICATION: US/10/786,791   DATE: 09/16/2004
                                                 TIME: 12:20:54

Input Set : N:\Crf3\RULE60\10786791.raw
Output Set: N:\CRF4\09162004\J786791.raw

```
 96 <220> FEATURE:
 97 <221> NAME/KEY: VARIANT
 98 <222> LOCATION: 2
 99 <223> OTHER INFORMATION: Xaa = Pro or 4-hydroxyproline
100 <220> FEATURE:
101 <221> NAME/KEY: VARIANT
102 <222> LOCATION: 3
103 <223> OTHER INFORMATION: Xaa = Tyr or a non-natural derivative of tyrosine
104 <220> FEATURE:
105 <221> NAME/KEY: VARIANT
106 <222> LOCATION: 4
107 <223> OTHER INFORMATION: Xaa = Gly or Asp
108 <400> SEQUENCE: 3
```
W--> 109   Cys Xaa Xaa Xaa Leu Cys
```
110            1               5
112 <210> SEQ ID NO: 4
113 <211> LENGTH: 11
114 <212> TYPE: PRT
115 <213> ORGANISM: Artificial Sequence
116 <220> FEATURE:
117 <223> OTHER INFORMATION: synthetically generated peptide
118 <220> FEATURE:
119 <221> NAME/KEY: MOD_RES
120 <222> LOCATION: 4
121 <223> OTHER INFORMATION: Xaa = 4-hydroxyproline
122 <220> FEATURE:
123 <221> NAME/KEY: MOD_RES
124 <222> LOCATION: 5
125 <223> OTHER INFORMATION: Xaa = meta-chlorotyrosine
126 <400> SEQUENCE: 4
```
W--> 127   Trp Glu Cys Xaa Xaa Gly Leu Cys Trp Ile Gln
```
128            1               5                   10
130 <210> SEQ ID NO: 5
131 <211> LENGTH: 11
132 <212> TYPE: PRT
133 <213> ORGANISM: Artificial Sequence
134 <220> FEATURE:
135 <223> OTHER INFORMATION: synthetically generated peptide
136 <220> FEATURE:
137 <221> NAME/KEY: MOD_RES
138 <222> LOCATION: 4
139 <223> OTHER INFORMATION: Xaa = 4-hydroxyproline
140 <220> FEATURE:
141 <221> NAME/KEY: MOD_RES
142 <222> LOCATION: 5
143 <223> OTHER INFORMATION: Xaa = meta-chlorotyrosine
144 <400> SEQUENCE: 5
```
W--> 145   Tyr Glu Cys Xaa Xaa Gly Leu Cys Tyr Ile Gln
```
146            1               5                   10
```

RAW SEQUENCE LISTING
PATENT APPLICATION: US/10/786,791

DATE: 09/16/2004
TIME: 12:20:54

Input Set : N:\Crf3\RULE60\10786791.raw
Output Set: N:\CRF4\09162004\J786791.raw

```
  148 <210> SEQ ID NO: 6
  149 <211> LENGTH: 11
  150 <212> TYPE: PRT
  151 <213> ORGANISM: Artificial Sequence
  152 <220> FEATURE:
  153 <223> OTHER INFORMATION: synthetically generated peptide
  154 <220> FEATURE:
  155 <221> NAME/KEY: MOD_RES
  156 <222> LOCATION: 4
  157 <223> OTHER INFORMATION: Xaa = 4-hydroxyproline
  158 <220> FEATURE:
  159 <221> NAME/KEY: MOD_RES
  160 <222> LOCATION: 5
  161 <223> OTHER INFORMATION: Xaa = meta-chlorotyrosine
  162 <400> SEQUENCE: 6
W-->163      Tyr Glu Cys Xaa Xaa Gly Leu Cys Trp Ile Gln
  164           1               5                   10
  166 <210> SEQ ID NO: 7
  167 <211> LENGTH: 11
  168 <212> TYPE: PRT
  169 <213> ORGANISM: Artificial Sequence
  170 <220> FEATURE:
  171 <223> OTHER INFORMATION: synthetically generated peptide
  172 <220> FEATURE:
  173 <221> NAME/KEY: MOD_RES
  174 <222> LOCATION: 4
  175 <223> OTHER INFORMATION: Xaa = 4-hydroxyproline
  176 <220> FEATURE:
  177 <221> NAME/KEY: MOD_RES
  178 <222> LOCATION: 5
  179 <223> OTHER INFORMATION: Xaa = meta-chlorotyrosine
  180 <400> SEQUENCE: 7
W-->181      Trp Glu Cys Xaa Xaa Gly Leu Cys Tyr Ile Gln
  182           1               5                   10
  184 <210> SEQ ID NO: 8
  185 <211> LENGTH: 11
  186 <212> TYPE: PRT
  187 <213> ORGANISM: Artificial Sequence
  188 <220> FEATURE:
  189 <223> OTHER INFORMATION: synthetically generated peptide
  190 <220> FEATURE:
  191 <221> NAME/KEY: MOD_RES
  192 <222> LOCATION: 4
  193 <223> OTHER INFORMATION: Xaa = 4-hydroxyproline
  194 <220> FEATURE:
  195 <221> NAME/KEY: MOD_RES
  196 <222> LOCATION: 5
  197 <223> OTHER INFORMATION: Xaa = meta-chlorotyrosine
  198 <400> SEQUENCE: 8
```

RAW SEQUENCE LISTING
PATENT APPLICATION: US/10/786,791

DATE: 09/16/2004
TIME: 12:20:54

Input Set : N:\Crf3\RULE60\10786791.raw
Output Set: N:\CRF4\09162004\J786791.raw

```
W--> 199        Trp Glu Cys Xaa Xaa Asp Leu Cys Trp Ile Gln
     200          1           5               10
     202 <210> SEQ ID NO: 9
     203 <211> LENGTH: 11
     204 <212> TYPE: PRT
     205 <213> ORGANISM: Artificial Sequence
     206 <220> FEATURE:
     207 <223> OTHER INFORMATION: synthetically generated peptide
     208 <220> FEATURE:
     209 <221> NAME/KEY: MOD_RES
     210 <222> LOCATION: 4
     211 <223> OTHER INFORMATION: Xaa = 4-hydroxyproline
     212 <220> FEATURE:
     213 <221> NAME/KEY: MOD_RES
     214 <222> LOCATION: 5
     215 <223> OTHER INFORMATION: Xaa = meta-chlorotyrosine
     216 <400> SEQUENCE: 9
W--> 217        Tyr Glu Cys Xaa Xaa Asp Leu Cys Tyr Ile Gln
     218          1           5               10
     220 <210> SEQ ID NO: 10
     221 <211> LENGTH: 11
     222 <212> TYPE: PRT
     223 <213> ORGANISM: Artificial Sequence
     224 <220> FEATURE:
     225 <223> OTHER INFORMATION: synthetically generated peptide
     226 <220> FEATURE:
     227 <221> NAME/KEY: MOD_RES
     228 <222> LOCATION: 4
     229 <223> OTHER INFORMATION: Xaa = 4-hydroxyproline
     230 <220> FEATURE:
     231 <221> NAME/KEY: MOD_RES
     232 <222> LOCATION: 5
     233 <223> OTHER INFORMATION: Xaa = meta-chlorotyrosine
     234 <400> SEQUENCE: 10
W--> 235        Tyr Glu Cys Xaa Xaa Asp Leu Cys Trp Ile Gln
     236          1           5               10
     238 <210> SEQ ID NO: 11
     239 <211> LENGTH: 11
     240 <212> TYPE: PRT
     241 <213> ORGANISM: Artificial Sequence
     242 <220> FEATURE:
     243 <223> OTHER INFORMATION: synthetically generated peptide
     244 <220> FEATURE:
     245 <221> NAME/KEY: MOD_RES
     246 <222> LOCATION: 4
     247 <223> OTHER INFORMATION: Xaa = 4-hydroxyproline
     248 <220> FEATURE:
     249 <221> NAME/KEY: MOD_RES
     250 <222> LOCATION: 5
```

RAW SEQUENCE LISTING ERROR SUMMARY   DATE: 09/16/2004
PATENT APPLICATION: US/10/786,791   TIME: 12:20:55

Input Set : **N:\Crf3\RULE60\10786791.raw**
Output Set: **N:\CRF4\09162004\J786791.raw**

Please Note:
Use of n and/or Xaa have been detected in the Sequence Listing. Please review the
Sequence Listing to ensure that a corresponding explanation is presented in the <220>
to <223> fields of each sequence which presents at least one n or Xaa.

Seq#:1; Xaa Pos. 1,2,3,4
Seq#:2; Xaa Pos. 1,2,4,5,6,9,10,11
Seq#:3; Xaa Pos. 2,3,4
Seq#:4; Xaa Pos. 4,5
Seq#:5; Xaa Pos. 4,5
Seq#:6; Xaa Pos. 4,5
Seq#:7; Xaa Pos. 4,5
Seq#:8; Xaa Pos. 4,5
Seq#:9; Xaa Pos. 4,5
Seq#:10; Xaa Pos. 4,5
Seq#:11; Xaa Pos. 4,5
Seq#:12; Xaa Pos. 1,4,5
Seq#:13; Xaa Pos. 4,5
Seq#:14; Xaa Pos. 5
Seq#:15; Xaa Pos. 4
Seq#:16; Xaa Pos. 4,5
Seq#:17; Xaa Pos. 8
Seq#:18; Xaa Pos. 8,9
Seq#:19; Xaa Pos. 10
Seq#:20; Xaa Pos. 10
Seq#:21; Xaa Pos. 10
Seq#:22; Xaa Pos. 10
Seq#:23; Xaa Pos. 10
Seq#:24; Xaa Pos. 10
Seq#:25; Xaa Pos. 10
Seq#:26; Xaa Pos. 1,2,10,11

Invalid Line Length:
The rules require that a line not exceed 72 characters in length. This includes spaces.

Seq#:2; Line(s) 55,60

VERIFICATION SUMMARY
PATENT APPLICATION: **US/10/786,791**

DATE: 09/16/2004
TIME: 12:20:55

Input Set : **N:\Crf3\RULE60\10786791.raw**
Output Set: **N:\CRF4\09162004\J786791.raw**

```
L:43 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1 after pos.:0
L:87 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:2 after pos.:0
L:109 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:3 after pos.:0
L:127 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:4 after pos.:0
L:145 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:5 after pos.:0
L:163 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:6 after pos.:0
L:181 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:7 after pos.:0
L:199 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:8 after pos.:0
L:217 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:9 after pos.:0
L:235 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:10 after pos.:0
L:253 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:11 after pos.:0
L:275 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:12 after pos.:0
L:293 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:13 after pos.:0
L:307 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:14 after pos.:0
L:321 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:15 after pos.:0
L:339 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:16 after pos.:0
L:354 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:17 after pos.:0
L:373 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:18 after pos.:0
L:387 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:19 after pos.:0
L:401 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:20 after pos.:0
L:415 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:21 after pos.:0
L:429 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:22 after pos.:0
L:443 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:23 after pos.:0
L:457 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:24 after pos.:0
L:471 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:25 after pos.:0
L:498 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:26 after pos.:0
```